



Wildland Fire Apparatus Operations

Course Plan

Course Details

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|----------------------------|---|
| Certification: | Fire Apparatus Driver/Operator – Wildland Fire Apparatus |
| CTS Guide: | Fire Apparatus Driver/ Operator – Wildland Fire Apparatus (August 2015) |
| Description: | This course provides information on preventive maintenance and operation of a wildland fire apparatus. Topics include routine tests, inspections, and servicing functions on the systems and components unique to wildland fire apparatus, and operating a wildland fire apparatus and producing an effective fire stream. This course is based on the 2014 edition of <i>NFPA 1002 Standard for Fire Apparatus Driver/Operator Professional Qualifications</i> . |
| Designed For: | Career and volunteer fire service personnel who drive and operate a wildland fire apparatus |
| Prerequisites: | Hold a valid Class C Firefighter Endorsed driver's license (minimum) Successfully completed OSFM Fire Fighter I training Fire Apparatus Driver/Operator 1A (2008 or 2015 version) Fire Apparatus Driver/Operator 1B (2008 or 2015 version) Completed a minimum of four (4) hours driving a wildland fire apparatus Completed the activities from Driver/Operator 1A while driving a wildland fire apparatus |
| Standard: | Complete all activities and skills Complete the summative test with a minimum score of 80% |
| Hours: | Lecture: 4:30 Activities: 1:30 Skills: 17:00 Testing: 1:00 |
| Hours (Total): | 24:00 |
| Maximum Class Size: | 30 |

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Instructor Level: This course requires one (1) primary instructor and sufficient assistant instructors to meet the skills ratio

Instructor/Student Ratio: Lecture: 1:30 Skills: 1:10

Restrictions: Sufficient fire apparatus and adequate space to accommodate the students in the class and the required skills

SFT Designation: CFSTES

Required Resources

Instructor Resources

To teach this course, instructors need:

- *Fire Apparatus Driver/Operator*, Second Edition, Jones & Bartlett, ISBN: 9781284026917
or
Pumping and Aerial Apparatus Driver/Operator Handbook, Third Edition, IFSTA, ISBN: 9780879395711
- Maintenance and inspection forms
- Manufacturer's specifications and requirements

Online Instructor Resources

The following instructor resources are available online at

<http://osfm.fire.ca.gov/training/SFTCurriculum>:

- *Wildland Fire Apparatus Operations Student Supplement*, November 2015, State Fire Training
- Wildland Fire Apparatus Operations required activities

Student Resources

To participate in this course, students need:

- *Fire Apparatus Driver/Operator*, Second Edition, Jones & Bartlett, ISBN: 9781284026917
or
Pumping and Aerial Apparatus Driver/Operator Handbook, Third Edition, IFSTA, ISBN: 9780879395711
- *Wildland Fire Apparatus Operations Student Supplement*, November 2015, State Fire Training
- Personal protective clothing

Facilities, Equipment, and Personnel

The following facilities, equipment, or personnel are required to deliver this course:

- Standard learning environment or facility
- Writing board or paper conference pads

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- Markers, erasers
- Computer or tablet with presentation or other viewing software
- Amplification devices
- Projector and screen
- Sufficient wildland fire apparatus to accommodate the students in the class
- Tools and equipment for inspection and testing
- Water tank
- Pressurized water source
- Static water source
- Adequate space and terrain for required activities

Unit 1: Introduction

Topic 1-1: Orientation and Administration

Terminal Learning Objective

At the end of this topic, a student will be able to identify facility and classroom requirements and identify course objectives, events, requirements, assignments, activities, resources, evaluation methods, and participation requirements in the course syllabus.

Enabling Learning Objectives

1. Identify facility requirements
 - Restroom locations
 - Food locations
 - Smoking locations
 - Emergency procedures
2. Identify classroom requirements
 - Start and end times
 - Breaks
 - Electronic device policies
 - Special needs and accommodations
 - Other requirements as applicable
3. Review course syllabus
 - Course objectives
 - Calendar of events
 - Course requirements
 - Student evaluation process
 - Assignments
 - Activities
 - Required student resources
 - Class participation requirements

Discussion Questions

1. What is a summative test?

Activities

1. To be determined by the instructor.

Topic 1-2: Fire Apparatus Driver/Operator – Wildland Fire Apparatus Certification Process

Terminal Learning Objective

At the end of this topic, a student will be able to identify the courses and requirements for the Fire Apparatus Driver/Operator – Wildland Fire Apparatus certification, and be able to describe the certification task book and testing process.

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Enabling Learning Objectives

1. Identify the courses required for Fire Apparatus Driver/Operator – Wildland Fire Apparatus certification
 - Fire Apparatus Driver/Operator 1A: Driver/Operator
 - Fire Apparatus Driver/Operator 1B: Pumping Apparatus Operations
2. Identify any other requirements for Fire Apparatus Driver/Operator – Wildland Fire Apparatus certification
 - OSFM certified Fire Fighter I
 - Experience
 - Have a minimum of one (1) year full-time, paid or volunteer, part-time paid experience in a California fire department as a wildland fire apparatus driver/operator
3. Describe the certification task book process
 - Complete all prerequisites and course work
 - Submit application and fees to request certification task book
 - Complete all job performance requirements included in the task book
 - Must have identified evaluator verify individual task completion via signature
 - Must have Fire Chief or authorized representative verify task book completion via signature
 - Must be employed by a California Fire Agency in the position prior to submitting completed task book to State Fire Training
4. Describe the certification testing process
 - Complete course work
 - Schedule online certification test
 - Schedule skills evaluation test

Discussion Questions

1. What is the experience requirement for Fire Apparatus Driver/Operator – Wildland Fire Apparatus certification?

Activities

1. To be determined by the instructor.

Unit 2: Preventive Maintenance

Topic 2-1: Perform and Document Routine Tests, Inspections, and Servicing Functions Unique to Wildland Fire Apparatus

Terminal Learning Objective

At the end of this topic, a student, given a wildland fire apparatus, tools and equipment, manufacturer's specifications and requirements, inspection forms, and policies and procedures of the jurisdiction, will be able to perform and document routine tests, inspections, and servicing functions on the systems and components unique to wildland fire

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apparatus, in addition to those in NFPA 1002 Paragraph 4.2.1, to verify their operational status.

Enabling Learning Objectives

1. Explain the manufacturer's specifications and requirements
2. Discuss the policies and procedures of the jurisdiction, including documentation requirements
3. Describe wildland fire apparatus systems and components
 - Foam systems
 - Pumping systems
 - Water tank and/or other extinguishing agent levels (if applicable)
 - Four-wheel drive system
4. Discuss inspection requirements when transitioning from off-road to on-road operations
5. Inspect wildland fire apparatus
6. Use tools and equipment
7. Recognize system problems and out-of-service criteria
8. Correct any deficiency noted according to policies and procedures and/or manufacturer's specifications and requirements

Discussion Questions

1. How do you maintain your four-wheel drive during the off-season?
2. Why is it important to do a pretrip and posttrip inspection?
3. What should be inspected when transitioning from off-road to on-road driving?
4. What equipment is unique to a wildland fire apparatus?
5. How can off-road driving affect your air filters?

Activities

1. Divide students into small groups. Have each group perform a wildland fire apparatus inspection using a form provided by the instructor and present their findings.

CTS Guide Reference: CTS 1-1

Unit 3: Operations

Topic 3-1: Operate a Wildland Fire Apparatus

Terminal Learning Objective

At the end of this topic, a student, given a wildland fire apparatus, applicable laws and regulations, policies and procedures of the jurisdiction, predetermined route off of a public way that incorporates the maneuvers and features that the driver/operator is expected to encounter during normal operations, will be able to operate a wildland fire apparatus in compliance with all applicable jurisdictional rules and regulations and operational limitations of the apparatus.

Enabling Learning Objectives

1. Recognize wildland fire apparatus resource typing
2. Explain the effects on vehicle control of braking reaction time and load factors

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3. Explain the effects of high center of gravity on roll-over potential, general steering reactions, speed, and centrifugal force
4. Discuss applicable laws and regulations
5. Review policies and procedures of the jurisdiction
6. Describe the principles of skid avoidance, night driving, shifting, and gear patterns
7. Discuss negotiating intersections, railroad crossings, and bridges
8. Describe weight and height limitations for both roads and bridges
9. Describe automotive gauges and their operation
10. Explain operational limits
11. Discuss off-road wildland fire apparatus emergencies
12. Operate passenger restraint devices
13. Maintain safe following distances
14. Maintain control of the wildland fire apparatus while accelerating, decelerating, and turning, given road, weather, and traffic conditions
15. Operate the wildland fire apparatus under adverse environmental or driving surface conditions
16. Operate the wildland fire apparatus during nonemergency conditions
17. Use automotive gauges and controls

Discussion Questions

1. How do you determine if a bridge is safe to cross?
2. What are some ways to estimate slope in the field?
3. Why is the burn always a good place to start your fire attack and can you deviate from that? If so, when and why?
4. When should you inhibit exhaust regeneration?
5. When should you engage your front axle?
6. How does the use of the auxiliary brake differ between on- and off-road driving?
7. What tactics can you use while encountering uneven road surface to maintain control?
8. What is the safe following distance on a mid-slope road?
9. What are the functions and duties of a spotter?

Activities

1. Present pictures of wildland driving environments and have the students identify and discuss hazards and mitigation techniques.
2. Activity 3-1-1: Operate a Wildland Fire Apparatus Off-road

CTS Guide Reference: CTS 2-1

Topic 3-2: Produce Effective Fire Streams

Terminal Learning Objective

At the end of this topic, a student, given a wildland fire apparatus, water tank, pressurized water source, and static water source, will be able to produce an effective fire stream by engaging the pump, setting all pressure-control and vehicle safety devices, and achieving the rated flow of the nozzle while monitoring the apparatus for potential problems.

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Enabling Learning Objectives

1. Explain hydraulic calculations for friction loss and flow using both written formulas and estimation methods
2. Describe the safe operation of the pump
3. Discuss correct apparatus placement
4. Describe personal safety considerations
5. Discuss the reliability of static water sources
6. Discuss mobile attack operations
7. Position a wildland fire apparatus to operate at a fire hydrant and at a static water source
8. Position apparatus for fire attack
9. Transfer power from vehicle engine to pump
10. Draft
11. Operate pumper pressure control systems
12. Operate the volume/pressure transfer valve (multistage pumps only)
13. Operate auxiliary cooling systems
14. Make the transition between internal and external water sources
15. Assemble hose lines, nozzles, valves, and appliances

Discussion Questions

1. What is the importance of water conservation and how do you achieve it?
2. What are the dangers of mobile attack with personnel in front of the engine on a hose line?
3. What are your considerations when spotting an apparatus at a static water source?
4. How do you determine what your pump discharge pressure is when you can no longer see the nozzle?
5. How does slope affect your discharge pressure?

Activities

1. Activity 3-2-1: Produce an Effective Fire Stream

CTS Guide Reference: CTS 2-2

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Time Table

| Segment | Lecture Time | Activity/Skills Time | Total Unit Time |
|--|--------------|----------------------|-----------------|
| Unit 1: Introduction | | | |
| Topic 1-1: Orientation and Administration | | | |
| Lecture | 0:30 | | |
| To be determined by the instructor | | 0:00 | |
| Topic 1-2: Wildland Fire Apparatus Certification Process | | | |
| Lecture | 0:30 | | |
| To be determined by the instructor | | 0:00 | |
| Unit 1 Totals | 1:00 | 0:00 | 1:00 |
| Unit 2: Preventive Maintenance | | | |
| Topic 2-1: Perform Routine Tests, Inspections, and Servicing Functions Unique to Wildland Fire Apparatus | | | |
| Lecture | 0:30 | | |
| Recommended by State Fire Training | | 1:00 | |
| Unit 2 Totals | 0:30 | 1:00 | 1:30 |
| Unit 3: Operations | | | |
| Topic 3-1: Operate a Wildland Fire Apparatus | | | |
| Lecture | 2:00 | | |
| Recommended by State Fire Training | | 0:30 | |
| Activity 3-1-1: Operate a Wildland Fire Apparatus Off-road | | * | |
| Topic 3-2: Produce an Effective Fire Stream | | | |
| Lecture | 1:00 | | |
| To be determined by the instructor | | | |
| Activity 3-2-1: Produce an Effective Fire Stream | | * | |
| Unit 3 Totals | 3:00 | 0:30 | 3:30 |
| Lecture, Activity, and Unit Totals: | 4:30 | 17:30 | 22:00 |

Course Totals

| | |
|---------------------------------|--------------|
| Total Lecture Time (LT) | 4:30 |
| Total Activity Time (AT) | 1:30 |
| Total Skills Practice Time (ST) | *17:00 |
| Total Testing Time (TT) | 1:00 |
| Total Course Time | 24:00 |

Note: Skills practice time will vary depending on the number of students in the program. It is important to remember that the suggested skill hours are for 30 students.